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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,936	12/27/2001	Tom Simonsen	1410-772	7295

7590 08/26/2004

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EXAMINER	
CHO, UN C	

ART UNIT	PAPER NUMBER
2682	8

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/026,936	Applicant(s) SIMONSEN, TOM
	Examiner Un C Cho	Art Unit 2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-11 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-11 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5 and 7.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 4/9/2002 and 2/7/2003 was filed after the mailing date of the Application #10/026,936 on 12/27/2001. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

2. The disclosure is objected to because of the following informalities:

Page 1, line 6 recites, "I order to ..." it should be "In order to ...".

Page 4, line 20 recites, "of prefered ..." it should be "of preferred ..." instead.

Page 11, line 18 recites, "deteroriate" it should be "deteriorate" instead.

Appropriate correction is required.

Claim Objections

3. Claim 9 is objected to because of the following informalities:

Throughout claim 9 capital letters are used at the beginning of each sentence after the use of a dash (-) should be lower case letters instead.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gruenberg (US 6,075,817) in view of Nielsen (US 6,362,702) and Delano et al. (US 5,909,153).

Regarding claim 1, Gruenberg teaches a transmitter (Fig. 9a) for transmitting a telecommunications signal, the transmitter having an input (IN of Fig. 9a) for an input signal and an output (OUT of Fig. 9a) for a load (Transmission line of Fig. 9a; Col. 8, line 57 – Col. 9, line 17).

However, Gruenberg fails to specifically disclose a controlled self oscillating modulator for pulse width modulating the input signal, said controlled self oscillating modulator comprising a comparator and means for generating controlled self oscillations, a switching stage for amplification of the pulse width modulated signal, a low pass demodulation filter for demodulating the amplified pulse width modulated signal, a feedback loop from the filter to the transmitter input and means for adjusting an output impedance of the transmitter, the controlled self oscillating modulator and the switching stage forming a controlled self oscillation loop, said controlled self oscillation loop being connected in series to the input of the transmitter and the demodulation filter.

On the other hand, Nielsen teaches a controlled oscillating modulator for pulse width modulating the input signal, said controlled oscillating modulator comprising a comparator (3 of Fig. 1) (Nielsen, Col. 3, lines 29 – 31).

Delano also teaches a switching stage (304 of Fig. 3) for amplification of the pulse width modulated signal, thus generating an amplified pulse width modulated signal, a filter (306 of Fig. 3) for demodulating the amplified pulse width modulated signal, thus obtaining an output signal to be fed to the transmitter output, a feedback loop from the filter to the transmitter input and the modulator and the switching stage forming a loop, the loop being connected in series to the input of the transmitter and the filter (thus allowing for adjusting an output impedance of the transmitter) (Delano, Col. 3, lines 23 – 34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Delano to the modified system of Gruenberg and Nielsen in order to provide an improved technique for compensating for delays in modulator loops such that greater delays must be tolerated without adversely affecting loop stability.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gruenberg, Nielsen Delano as applied to claim 1, and further in view of Endo (US 4,864,589) and Spillman, Jr. et al. (US 5,703,576).

Regarding claims 2, Gruenberg, Nielsen and Delano disclose everything claimed as explained above except an output transformer having a first winding

connected to the low pass filter and including a sense resistor connected between a reference potential and a connection point at the other end of the first transformer winding and the connecting point being connected to the transmitter input.

However, Endo teaches a transformer (114 of Fig. 1) having a first winding connected to a demodulator (116 of Fig. 1; Col. 4, lines 24 – 50) and moreover, Spillman teaches a sense resistor (44 of Fig. 1) connected between a reference potential and a connection point of the first transformer winding and the connection point being connected to the input (Spillman, Col. 4, lines 51 – 64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Spillman and Endo to the modified system of Gruenberg, Nielsen and Delano in order to provide non-contact apparatus and methods for interrogating smart structure sensors, particularly embedded sensors thus needed apparatus and methods should also be convenient to use for resistive sensors and optical sensors.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gruenberg, Nielsen and Delano as applied to claim 1 above, and further in view of Cordis et al. (US 5,472,443).

Regarding claim 3, Gruenberg Nielsen and Delano disclose everything claimed as explained above except controlled self-oscillations having a frequency in the range of 3 to 10 times the frequency of the telecommunications signal.

However, Cordis teaches that the self-oscillating circuit produces signal preferably having a frequency of oscillation in the range of 40 - 100khz (the frequency of the telecommunications signal is f_0, which according to figure 2 if f_4 is 10^4khz then f_0 is between 0 and 10khz, thus, calculating the range of 3 to 10 times taking into consideration f_0 as being somewhere in between 0 and 10khz) of the telecommunications signal (Cordis, Col. 11, lines 16 – 21). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Cordis to the modified system of Gruenberg, Nielsen and Delano in order to provide an apparatus and methods for supplying lower voltages than typical of previous known devices and at high power.

8. Claims 4 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gruenberg, Nielsen and Delano as applied to claim 1 above, and further in view of Kerber et al. (US 2001/0030612).

Regarding claim 4, Gruenberg, Nielsen and Delano disclose everything as explained above except that the load is a digital subscriber line. However, Kerber teaches that the transmitting unit (15 of Fig. 3) containing a transmitter (50 of Fig. 3) communicating with a load (digital subscriber line) (Kerber, Page 3, Paragraph 0018, lines 1 – 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Kerber to the modified system of Gruenberg, Nielsen and Delano in order to provide a

remotely activated device that utilize simple and inexpensive components to indicate an occurrence of an event or an activity.

Regarding claim 5, Gruenberg as modified by Nielsen, Delano and Kerber teaches that the load is a coaxial line (Kerber, Page 3, Paragraph 0018, lines 1 – 6).

Regarding claim 6, Gruenberg as modified by Nielsen, Delano and Kerber teaches that the load is a radio antenna (Kerber, Page 3, Paragraph 0018, lines 1 – 9).

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gruenberg, Nielsen and Delano as applied to claim 1 above, and further in view of Cummins et al. (US 6,278,864).

Regarding claim 7, Gruenberg, Nielsen and Delano disclose everything claimed as explained above except a line card for connection of telecommunications equipment to a transmission line. However, Cummins teaches a PCMCIA RF card/antenna (Fig. 1, 380) for connection of telecommunications equipment to a transmission line. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Cummins to the modified system of Gruenberg, Nielsen and Delano in order to provide a compact, low cost and low power RF transceiver having an efficient contention resolution capability that fits into a housing sized within a compact form factor for use with PCs and/or peripherals.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gruenberg, Nielsen and Delano as applied to claim 1 above, and further in view of Dobson (US 6,704,317).

Regarding claim 8, Gruenberg, Nielsen and Delano disclose everything claimed as explained above except a modem for connection of telecommunications equipment to a transmission line. However, Dobson teaches a gateway modem for a communication system (Dobson, Col. 3, lines 46 – 51). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Dobson to the modified system of Gruenberg, Nielsen and Delano in order to provide a communication system that operates reliably over standard telephone wiring found in residential environments, thereby eliminating the need for re-wiring a residence.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gruenberg (US 6,075,817) in view of Delano et al. (US 5,909,153).

Regarding claim 9, Gruenberg teaches a method of transmitting a telecommunications signal to a load (Transmission line of Fig. 9a; Col. 8, line 57 – Col. 9, line 17).

However, Gruenberg fails specifically disclose superimposing the telecom signal on a carrier signal into a pulse width modulated signal, amplifying the pulse width modulated signal, inputting the amplified pulse width modulated

signal to a controlled self oscillating modulator, generating said carrier signal in said controlled self oscillating modulator, inputting the amplified pulse width modulated signal to a low pass filter to generate a demodulated signal, feeding back said demodulated signal and superimposing it on the telecommunications signal, adjusting an output impedance of the transmitter and feeding said demodulated signal to the load.

On the other hand Delano teaches superimposing the input signal (310 of Fig. 3) into a pulse width modulated signal, amplifying the modulated signal (304 of Fig. 3), inputting the amplified signal to a modulator, inputting the amplified signal to a filter, feeding back the demodulated signal and superimposing it on the telecommunications signal, adjusting an output impedance of the transmitter (Delano teaches the element to adjust an output impedance of the transmitter by having the modulator and the switching stage forming a loop, the loop being connected in series to the input of the transmitter and the filter) and feeding the demodulated signal to the load (Delano, Col. 3, lines 23 – 48). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Delano to the system of Gruenberg in order to provide an improved technique for compensating for delays in modulator loops such that greater delays must be tolerated without adversely affecting loop stability.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gruenberg and Delano as applied to claim 9 above, and further in view of Cordis et al. (US 5,472,443).

Regarding claim 10, Gruenberg and Delano disclose everything claimed as explained above except controlled self-oscillations having a frequency in the range of 3 to 10 times the frequency of the telecommunications signal. However, Cordis teaches that the self-oscillating circuit produces signal preferably having a frequency of oscillation in the range of 40 - 100khz (the frequency of the telecommunications signal is f_0, which according to figure 2 if f_4 is 10^4khz then f_0 is between 0 and 10khz, thus, calculating the range of 3 to 10 times taking into consideration f_0 as being somewhere in between 0 and 10khz) of the telecommunications signal (Cordis, Col. 11, lines 16 – 21). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Cordis to the modified system of Gruenberg and Delano in order to provide an apparatus and methods for supplying lower voltages than typical of previous known devices and at high power.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gruenberg and Delano as applied to claim 9, and further in view of Endo (US 4,864,589) and Spillman, Jr. et al. (US 5,703,576).

Regarding claims 11, Gruenberg and Delano disclose everything claimed as explained above except an output transformer having a first winding

connected to the low pass filter and including a sense resistor connected between a reference potential and a connection point at the other end of the first transformer winding and the connecting point being connected to the transmitter input.

However, Endo teaches a transformer (114 of Fig. 1) having a first winding connected to a demodulator (116 of Fig. 1; Col. 4, lines 24 – 50) and moreover, Spillman teaches a sense resistor (44 of Fig. 1) connected between a reference potential and a connection point of the first transformer winding and the connection point being connected to the input (Spillman, Col. 4, lines 51 – 64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the technique of Spillman and Endo to the modified system of Gruenberg and Delano in order to provide non-contact apparatus and methods for interrogating smart structure sensors, particularly embedded sensors thus needed apparatus and methods should also be convenient to use for resistive sensors and optical sensors.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rogers (US 4,147,985) discloses a low level modulation circuit for use in a radio transmitter.

Okada et al. (US 4,247,948) discloses an automatic modulation control in a transmitter.

Dinsmore (US 4,635,296) discloses an FM transmitter especially for physiological signal telemetry.

Dent (US 5,834,987) discloses a frequency synthesizer including a controlled oscillator, which is responsive to a frequency control input signal, to generate an output frequency.

Herring (US 5,703,565) discloses a transmitter circuit drive a transmit antenna for an electronic article surveillance system with an alternating drive signal.

Kramer et al. (US 6,388,431) discloses a process control device comprising a measuring circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Un C Cho whose telephone number is (703)305-8725. The examiner can normally be reached on M ~ F 8:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (703)308-6739. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Un C Cho UC 8/17/04
Examiner
Art Unit 2682

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8/23/04